Anthropogenic vegetation is a major source of biodiversity in densely populated landscapes, but human-made habitats are largely absent from ecosystem management policies. Compared to other types of vegetation, the classification and characterization of synanthropic plant communities faces specific challenges. Here we have applied an ecoregion-level numerical approach to classify and characterize the full spectrum of anthropogenic vegetation diversity in the Iberian Atlantic ecoregion. Such approach has allowed us to detect an inflation in the anthropogenic vegetation units reported in the literature, to organize anthropogenic vegetation diversity into three major groups, to detect a main axis of abiotic stress driving anthropogenic vegetation diversity, and to highlight the potential of anthropogenic habitats as biodiversity assets harboring up to one third of the ecoregional flora.